

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY**

HEARING CHARTER

The Administration's FY 2011 Research and Development Budget Proposal

Wednesday, February 24, 2010

9:30 – 11:30 a.m.

2318 Rayburn House Office Building

1. Purpose

On Wednesday, February 24, 2010, the Committee on Science and Technology will hold a hearing to examine the Administration's proposed fiscal year (FY) 2011 funding for Federal research, development, demonstration, and commercial application programs, in particular at agencies within the jurisdiction of the Committee. In addition, in preparation for a reauthorization of the 2007 America COMPETES Act, the Committee will examine the status of programs authorized in the 2007 Act, as reflected in the Administration's budget request.

2. Witness

Dr. John Holdren is the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy (OSTP). He also serves as Co-Chair of the President's Council of Advisors on Science and Technology. Dr. Holdren is on leave from Harvard, where he is the Teresa and John Heinz Professor of Environmental Policy at the Kennedy School of Government and Director of the Science, Technology, and Public Policy Program at the School's Belfer Center for Science and International Affairs.

3. Overview of FY 2011 R&D Budget Request

The President's FY 2011 budget proposes a total of \$147.7 billion for research and development (R&D) across all agencies, a \$343 million or 0.2 percent increase over the FY 2010 enacted level.¹ The budget would decrease for defense-related R&D, and increase by \$3.7 billion (5.9 percent) to \$66 billion for nondefense R&D, most of which is categorized as "basic and applied research" (\$61.6 billion). Funding for all research, development, demonstration, commercial application and science, technology,

¹ The FY 2010 enacted level does not include any carryover from the estimated \$21.5 billion in R&D funding in the American Recovery and Reinvestment Act, which included \$10.4 billion for NIH; \$3.0 billion for the NSF; \$5.5 billion for DOE; \$580 million for the NIST; \$1.0 billion for NASA; and \$830 million for the NOAA, all to be spent by the end of FY 2010.

engineering and mathematics (STEM) education activities at agencies and offices under the Committee's jurisdiction totals approximately \$44 billion in the FY 2011 request.²

The FY 2011 request would keep the three science agencies authorized in the COMPETES Act – the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), and the Department of Energy's (DOE) Office of Science – on a 10-year doubling path initiated in theory in 2007 but not realized until 2009. The Administration is requesting a total of \$13.3 billion for those three agencies to keep them on track for doubling by 2017. It may be helpful to think of this growth path in terms of its annual rate of increase, which for 10 years equals ~7 percent. The COMPETES Act put those same three agencies on a 7-year doubling path (10 percent annual growth), reflecting a compromise between the House's proposal for 10 years and the Senate's proposal for 5 years.

The Administration's FY 2011 budget also places priority on STEM education across the agencies. The total federal funding for STEM at all levels would be \$3.7 billion in FY 2011, including \$1 billion, representing a 40 percent increase, for K-12 STEM education. Of that \$1 billion, nearly half would be at the Department of Education: \$300 million for the proposed Effective Teaching and Learning in STEM program, and \$150 million through the Investing in Innovation (i3) program. The rest of the funding is spread across the Federal science agencies. Three STEM priorities of note are: RE-ENERGYSE (more on that below under the DOE summary), strong support for graduate research fellowships, and increased focus on research and evaluation.

4. Summary of 2007 COMPETES Act

The America COMPETES Act (P.L. 110-69) was signed into law by President Bush on August 9, 2007. A response to the 2005 National Academies' report *Rising Above the Gathering Storm*, COMPETES seeks to ensure U.S. students, teachers, businesses, and workers are prepared to continue leading the world in innovation, research, and technology. The law implemented recommendations from the *Gathering Storm* report, and specifically:

- Authorizes \$33.6 billion over FY 2008 – 2010 for STEM research and education programs across the Federal government.
- Keeps research programs at NSF, NIST and the DOE Office of Science on a near-term doubling path;
- Helps to prepare new teachers and provide current teachers with STEM content and teaching skills through NSF's Noyce Teacher Scholarship Program and Math and Science Partnerships Program;

² This is just a rough estimate across the agencies/offices under S&T (sole or joint) legislative jurisdiction and does not include all activities at all agencies to which we might have a claim in the case of legislation on those activities.

- Expands programs at NSF to enhance the undergraduate education of the future science and engineering workforce, including at 2-year colleges;
- Expands early career graduate-level grant programs and provides additional support for outstanding young investigators at NSF and DOE;
- Creates the Technology Innovation Program (TIP) at NIST (replacing the existing Advanced Technology Program or ATP) to fund high-risk, high-reward, pre-competitive technology development with high potential for public benefit;
- Puts the Manufacturing Extension Partnership (MEP), which provides cost-shared technical assistance to small manufacturers to modernize their operations, on a path to doubling over 10 years;
- Establishes an Advanced Research Projects Agency for Energy (ARPA-E), a nimble and semiautonomous research agency at DOE to engage in high-risk, high reward energy research;
- Includes provisions throughout the bill to help broaden participation by women and minorities in science and engineering fields at all levels; and
- Strengthens interagency planning and coordination for research infrastructure and information technology (i.e. high-speed computing).

5. Descriptions of Agency R&D Budgets

DEPARTMENT OF ENERGY

The Department of Energy supports a wide range of basic and applied research activities and world-class research facilities within the Science and Technology Committee's jurisdiction.

The Office of Science

The total FY 2011 budget request for the Office of Science (SC) is \$5.1 billion, a 4.4 percent increase (\$217 million) over FY 2010 enacted level. SC's responsibilities are in three main areas: selection and management of research; operation of world-class, state-of-the-art scientific facilities; and design and construction of new facilities. SC supports basic research in the following areas: fundamental research in energy, matter, and the basic forces of nature; biological systems; climate change and the environmental consequences of energy production, development, and use; fundamental science that supports the foundations for new energy technologies and environmental mitigation; a knowledge base for fusion as a potential future energy source; and advanced computational and networking tools critical to research. The Office of Science also supports several ongoing interagency initiatives such as the U.S. Global Change Research Program (\$191.2 million); the Climate Change Technology Program (\$706.2 million); Networking and Information Technology Research and Development (\$461.9 million); and the National Nanotechnology Initiative (\$331.3 million).

Advanced Research Projects Agency – Energy (ARPA-E)

The Administration requests approximately \$300 million for ARPA-E to support new projects and program direction. As envisioned by the *Gathering Storm* report, and authorized by the America COMPETES Act, the **Advanced Research Projects Agency – Energy (ARPA-E)** is responsible for funding specific high-risk, high-payoff, game-changing R&D projects to meet the Nation's long-term energy challenges. The mission of ARPA-E is to overcome the long-term and high-risk technological barriers in the development of energy technologies by sponsoring research and technology development that industry alone is unlikely to undertake.

The Omnibus Appropriations Act of 2009 provided \$15.0 million to stand up the ARPA-E program, and the 2009 Recovery Act provided \$400 million to carry out program activities through FY 2010. In FY 2009, ARPA-E released its first Funding Opportunity Announcement, and received 3700 responses. Ultimately 37 awardees were chosen. Proposals for the second round of funding were due in mid-January and despite the narrow technical scope the agency still received over 600 proposals. A third funding opportunity will be released in the spring of 2010.

Nuclear Energy

The Administration request for the Office of Nuclear Energy (NE) R&D is \$503 million, an 8 percent increase (\$37 million) over the FY 2010 enacted level, with close to 80 percent of that request dedicated to the Fuel Cycle R&D and Reactor Concepts RD&D programs. The Administration has reorganized NE to focus primarily on closing the nuclear fuel cycle and developing advanced nuclear reactor technologies. These changes include a zeroing out of the Nuclear Power 2010 program, moving the Generation IV Nuclear Energy Systems program into the newly created Reactor Concepts RD&D program, and the creation of the Nuclear Energy Enabling Technologies (NEET) program to develop cross-cutting technologies. In addition to the reorganization of NE's funding and programming, the President recently announced the formation of a Blue Ribbon Panel to examine alternative solutions to waste storage and issue a final report in two years.

Energy Efficiency and Renewable Energy

The Administration's proposal of \$2.35 billion for the Office of Energy Efficiency and Renewable Energy (EERE) represents a 5 percent (\$112 million) increase from the FY 2010 enacted level. The Administration proposes significant increases for investment in large-scale demonstrations in biopower, concentrating solar power, offshore wind, and advanced conventional water power. Vehicle technology research would also receive a significant increase, while hydrogen related research would fall. Energy efficiency activities would continue to support R&D for innovative new building technologies and a new focus on retrofitting existing buildings.

Fossil Energy

The Office of Fossil Energy's budget was reduced by \$191 million, reflecting a commitment to carbon capture and sequestration (CCS) technology development and a

shift in focus away from natural gas and oil R&D. Neither the Natural Gas Technologies program nor the Unconventional Fossil Energy Technologies program received funding and the gas hydrates initiative has been shifted over to the Office of Science.

Energy Innovation Hubs

The FY 2011 budget request proposes funding of \$34 million for the establishment of a new Energy Innovation Hub to specialize in Batteries and Energy Storage. This is in addition to requests of \$24 million each for three ongoing hubs initiated in FY 2010 - Fuels from Sunlight; Energy Efficient Buildings; and Nuclear Modeling and Simulation. The new Batteries and Energy Storage Hub will be housed under the Office of Science – Basic Energy Sciences program.

Plans for eight Energy Innovation Hubs were announced in FY 2010 with proposed budgets of approximately \$25 million each to support very large interdisciplinary teams focused on overcoming specific energy technology challenges. No federal funds for Hubs can be used for construction of permanent infrastructure, and all awardees must re-compete every five years.

RE-ENERGYSE

For the second year in a row the Administration is including a proposal to fund **RE-ENERGYSE** (Regaining our ENERGY and Science and Engineering Edge) with a suggested appropriation of \$55 million for FY 2011. This would support a broad range of workforce education and training activities at universities and community colleges for students interested in pursuing careers in energy. RE-ENERGYSE is intended to be a DOE-wide initiative. However, the majority of funding - \$50 million - comes out of EERE, with an additional \$5 million requested under the Nuclear Energy program. The National Science Foundation is proposing to contribute an additional \$19 million through five existing NSF programs, although this \$19 million approximates what NSF is already spending on energy specific proposals under those programs.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The FY 2011 budget request for NASA is \$19.0 billion. The proposal represents an increase of 1.5 percent over the enacted FY 2010 appropriation of \$18.7 billion for NASA. The President's FY 2011 request for NASA includes a projected increase in NASA's topline budget of \$6 billion over five years as compared to the FY 2010 request runout. Specifically, the FY 2011 budget request proposes \$19.45 billion for FY 2012, \$19.96 billion for FY 2013, \$20.6 billion for FY 2014, and \$20.99 billion for FY 2015. Within the proposed FY 2011 budget for NASA, an additional \$600 million in FY11 is provided to ensure the safe completion of the Space Shuttle manifest through the first quarter of FY 2011, if needed. The budget request also assumes extension of the operations and utilization of the International Space Station from 2016 to at least 2020. However, the Constellation Program, which includes the Ares 1 crew launch vehicle and the Orion crew exploration vehicle, would be cancelled under the proposed budget

request. In so doing, the budget request does not support the goal of returning Americans to the Moon by 2020 that was articulated in the FY 2010 budget request. In its place, the Administration proposes three new technology initiatives that total \$13.9 billion over five years that it describes as exploration-related and proposes to spend \$6 billion over five years in the development of commercial human spaceflight vehicles. The budget also initiates an agency-wide space technology program that is incorporated into a new Aeronautics and Space Research and Technology account, and provides an increase of approximately \$1.8 billion over four years for Earth observations and climate satellites and research, as compared to the FY 2010 request.

The FY 2011 budget request appears to be responsive to the NASA Authorization Act of 2008 [P.L. 110-422] in a number of areas, but diverges markedly from other areas of policy direction in the Act. Areas where the budget reflects direction and priorities established in the 2008 Act include: support for NASA's Earth Science Decadal Survey missions; support for aeronautics R&D on "green aviation"; support for extension of the operation and utilization of the International Space Station to at least 2020; and funding for exploration-related technology development activities. In addition, the request provides initial funding, in combination with funds requested for DOE, for restarting the domestic production of plutonium-238. The Administration's request for FY 2011 diverges from the 2008 Act in its proposed cancellation of the Constellation Program and in its investment in the development of commercial crew human spaceflight vehicles as the only potential direct U.S. access to the International Space Station, following the retirement of the Shuttle. The 2008 Act had made clear that the Congressional intent for a congressionally authorized commercial crew initiative *"not come at the expense of full funding of the amounts authorized...and for future fiscal years, for Orion Crew Exploration Vehicle development, Ares I Crew Launch Vehicle development, or International Space Station cargo delivery."* In addition, while the FY 2011 request for NASA focuses heavily on advanced technology development, the request does not propose funding for advanced technology development within the Science Mission Directorate, as directed in the 2008 Act.

NATIONAL SCIENCE FOUNDATION

The National Science Foundation budget request for FY 2011 totals \$7.424 billion, \$552 million or 8.0 percent more than FY 2010 funding (not including any 2010 carryover in the \$3.0 billion included for NSF in the 2009 Recovery Act). However, when funding for U.S. Coast Guard Icebreakers (\$54 million) is counted appropriately, the real growth is 7.2 percent.³ This level of funding keeps NSF on a 10-year doubling path. NSF provides approximately 22 percent of support for basic research at U.S. colleges and universities

³ In 2005, NSF signed an MOU with the US Coast Guard (USCG) in which NSF agreed to take over M&O budgetary authority for USCG Icebreakers operating in the Arctic and Antarctic. The rationale at the time was that 90+ percent of the USCG icebreakers time was dedicated to supporting NSF's science missions at the Poles. In FY 2010, the Appropriators required that budgetary authority be shifted back to USCG (PL 111-117). As a result, \$54 million is excluded from the FY 2010 NSF budget total, thereby obscuring the true growth in funding for NSF's programs.

and is second only to NIH in support for all academic research. The budget for NSF is divided into three main accounts: Research and Related Activities, Education and Human Resources, and Major Research Equipment and Facilities Construction.

Research and Related Activities

The Administration's budget would provide \$6.02 billion for Research and Related Activities (R&RA) in FY 2011, an increase of \$401 million or 7.1 percent over FY 2010 funding (NSF budget documents report 8.2 percent growth - see footnote on icebreakers). R&RA is made up primarily of six disciplinary directorates. The largest relative increases went to Engineering (+11 percent) and Computer and Information Science and Engineering (+10.6 percent). Geosciences, which funds atmospheric, earth and ocean sciences, including most of NSF's climate change research; and Biological Sciences, which funds 68 percent of all non-medical academic research in the life sciences, including environmental biology, also saw greater than 7 percent increases. Social, Behavioral and Economic Sciences received a 5.3 percent increase, and the Mathematical and Physical Sciences Directorate, the largest by far at NSF with a proposed \$1.4 billion in FY 2011, received a 4.3 percent increase.

The Administration's R&RA priorities for FY 2011 included a significant increase in funding for three programs labeled by NSF as "innovation" programs, including Partnerships for Innovation (\$19.2 million), Science and Engineering Beyond Moore's Law (\$70.2 million), and NSF's Centers programs (\$313.8 million across NSF). The cross-cutting area of research that received the most significant boost in the FY 2011 budget is climate change science. The Administration proposes \$370 million for NSF's contribution to the U.S. Global Change Research Program.

Education and Human Resources

The Education and Human Resources (EHR) Directorate, which funds education and broadening participation programs at all levels "from K to gray," would be funded at \$892 million in FY 2011, an increase of only \$19.2 million or 2.2 percent over FY 2010 funding. The Administration continues to offer a mixed message regarding this treatment of EHR relative to the healthy increase for R&RA. On the one hand, they point out that funding for EHR alone represents an incomplete picture of the many education and training programs and activities distributed across NSF. On the other hand, they maintain that NSF is primarily a research agency and that the Department of Education (DoED) has a greater responsibility for education, especially at the K-12 level. Significant funding (\$450 million) is requested for STEM education at DoED in the FY 2011 budget.

In the 2007 COMPETES Act, the Committee expanded teacher training programs at NSF, including the Noyce Teacher Scholarship Program and the Math and Science Partnerships Program (MSP). In the FY 2011 budget, Noyce would be funded at \$55 million, the same level since FY 2009, and MSP would be funded at \$58.2 million, the same level as in FY 2010 and a small decrease from FY 2009 funding. Both Noyce and MSP received significant funding in the Recovery Act (\$60 million and \$25 million, respectively).

Of particular note in the EHR budget is the proposed restructuring of programs to broaden participation in STEM at the undergraduate level. NSF is proposing a new comprehensive broadening participation program that builds on three existing programs: Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), Louis Stokes Alliances for Minority Participation (LSAMP) and Tribal Colleges Undergraduate Program (TCUP), and newly invites proposals from Hispanic Serving Institutions, consistent with the mandate in Sec. 7033 of the COMPETES Act. Funding for this newly consolidated program would be \$103 million in FY 2011, a \$13 million or 14.4 percent increase from the total FY 2010 funding for HBCU-UP, LSAMP and TCUP.

Major Research Equipment and Facilities Construction (MREFC)

The MREFC request for FY 2011 is \$165 million, an increase of \$41 million from FY 2010. MREFC also received \$400 million in the Recovery Act to initiate construction on three projects, two of which will continue to receive funding in FY 2011. The only new start in FY 2011 is the National Ecological Observatory Network (NEON), which passed final design review in November.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

The FY 2011 NIST Budget Request proposes a funding level of \$918.9 million, a 7.3 percent increase over the FY 2010 enacted budget. The budget would provide \$584.5 million for NIST's core Scientific and Technical Research and Services (STRS); \$124.8 million for Construction of Research Facilities (CRF); \$129.7 million for the Manufacturing Extension Partnership (MEP) program; and \$79.9 million for the Technology Innovation Program (TIP). The NIST FY 2011 budget request reflects the Administration's overarching priorities to promote U.S. innovation and competitiveness in energy and green technology, manufacturing, healthcare, cyber-security, and disaster resilient buildings and infrastructure.

Research and Facilities

The FY 2011 NIST budget requests \$584.5 million for the agency's Scientific and Technical Research Services (STRS). The STRS increase of \$69.4 million (13.5 percent) over FY 2010 encompasses a number of new initiatives to address the critical national priorities mentioned above. For instance, the request includes \$10 million for a new Green Manufacturing and Construction initiative, focused on the development of accurate metrics to assess environmental sustainability in manufacturing, and on research and measurement data to better assess the energy performance of buildings. In healthcare, in addition to continuing work on Healthcare Information Technology standards, the budget also includes a \$10 million initiative to support measurement science for the development of complex biologic drugs.

The FY 2011 budget request for CRF is \$124.8 million, a 15.1 percent decrease from the FY 2010 enacted budget. Last year's budget included \$47 million in Congressionally directed funding, which the agency did not request this year. The requested CRF funds

would support completion of the Boulder lab renovations and address maintenance needs at the Gaithersburg Laboratories.

Industrial Technology Services (ITS)

The \$129.7 million request for the MEP program is a 4 percent increase from FY 2010 enacted level. The MEP program is a public/private partnership in all 50 states and Puerto Rico that provides technical assistance for small manufacturers to modernize their operations and adapt to foreign competition. MEP Centers are supported by equal contributions from Federal funds, state funds, and client fees. The increase in the FY 2011 budget proposal would direct funds to innovation services for small and medium-sized manufacturers to accelerate technology adoption, promote environmentally sustainable practices, support market diversification, and improve workforce capabilities. The FY 2011 request for the Technology Innovation Program (TIP) is \$79.9 million, a \$10 million increase over FY 2010 enacted. TIP awards cost-shared grants to small companies and joint ventures for the development of high-risk, high-reward technologies that meet critical national needs.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The National Oceanic and Atmospheric Administration's (NOAA) budget request for FY 2011 is \$5.55 billion, a 17 percent (\$806 million) increase over the FY 2010 enacted level. The bulk of this increase is allotted for the National Environmental Satellite Data Information Systems (NESDIS) office, and more specifically for the Joint Polar Satellite System (formerly - National Polar-orbiting Operational Environmental Satellite System (NPOESS)). Specifically, NOAA is requesting an increase of \$678.6 million to \$1.061 billion for the new Joint Polar Satellite System. The increased funding will permit the agency to initiate work on its first satellite for mid-afternoon orbit coverage under the program. The balance of the funds permit NOAA to complete and launch the NPOESS Preparatory Project (NPP) satellite, which will now bridge the gap between NOAA's current satellites and the new generation. Additional detail on NPOESS restructuring is provided in Section 6 below.

DEPARTMENT OF HOMELAND SECURITY

The FY 2011 budget for the Department of Homeland Security Science and Technology Directorate (DHS S&T) would increase by 0.5 percent from FY 2010 enacted. However, this increase includes the transfer of research programs from the DHS Domestic Nuclear Detection Office (DNDO) to DHS S&T. When not including the new radiological and nuclear research portfolio, the DHS S&T budget would decrease by 12 percent. Overall, research priorities remain similar to previous years and the budget cut is enacted uniformly across the divisions with one exception: the Infrastructure and Geophysical Division was cut by 50 percent, eliminating two Congressionally directed programs that supported local, community-based terrorism response and mitigation research programs. The move of radiological and nuclear research from DNDO to S&T will consolidate all

DHS basic research within S&T and increase the efficiency and effectiveness of the research.

Overall, the DHS DNDO budget decreased by 20 percent, with the majority of this budget cut coming from the transfer of radiological and nuclear research to S&T. Additionally, DNDO is shifting priorities away from the research, development and deployment of a few specific technologies to a focus on understanding capability gaps in all sectors of homeland security and law enforcement while increasing test and evaluation programs to identify potential solutions.

6. SELECTED INTERAGENCY PROGRAMS

Restructuring NOAA's Polar Satellite Program (NPOESS)

As part of a tri-agency effort with NASA and the Department of Defense (DOD), NOAA has invested for several years in the development of the National Polar-orbiting Operational Satellite System (NPOESS), which is the next generation of polar-orbiting weather satellites that serve both civilian and military weather forecasting and climatology needs. However, NPOESS has suffered a string of cost increases (from \$6.9 billion at the Program's outset to the Government Accountability Office's (GAO) current estimate of \$15 billion) and schedule delays (some five years for the first satellite launch) that now threaten the continuity of reliable high-quality weather and climate data.

Reviews of NPOESS have blamed the cost and schedule overruns on the program's organizational structure, which places direction and decision-making authority with an Executive Committee consisting of the three agencies, rather than with a single agency. In the FY 2011 budget, the Administration is proposing a significant reorganization of NPOESS. Instead of being combined in a single program, NOAA and NASA will separate from DOD. NOAA and NASA will be responsible for the satellites flying in "afternoon" orbits (i.e. passing over sunlit regions of the Earth at local afternoon) while DOD will take control of the spacecraft flying early morning orbits. The two groups will procure their satellites separately; for the civilian side, NASA will perform the acquisition management in much the same way it handles such tasks for NOAA's geostationary weather satellites. NOAA will now refer to its portion of NPOESS as the **Joint Polar Satellite System (JPSS)**. The program will continue to rely on European satellites for coverage in a third orbit.

U.S. Global Climate Change Research Program (USGCRP)

The FY 2011 budget request proposes a \$439 million increase (or 21 percent) over FY 2010 for a total of \$2.56 billion in funding for integrated climate and global change research conducted under the U.S. Global Change Research Program (USGCRP) umbrella, bringing federal climate research funding to the highest level ever. Started in 1989, the USGCRP is an interagency effort comprised of 13 departments and agencies. Activities of the USGCRP are grouped under the following areas: improving knowledge of Earth's past and present climate variability and change; improving understanding of

natural and human forces of climate change; improving capability to model and predict future conditions and impacts; assessing the Nation's vulnerability to current and anticipated impacts of climate change; and improving the Nation's ability to respond to climate change by providing climate information and decision support tools that are useful to policymakers and the general public.

National Nanotechnology Initiative (NNI)

The Science and Technology Committee was instrumental in the development and enactment of the 21st Century Nanotechnology Research and Development Act of 2003 (P.L. 108-153), which authorizes the National Nanotechnology Initiative (NNI). The NNI focuses on R&D that creates materials, devices, and systems that exploit the fundamentally distinct properties of matter as it is manipulated at the nanoscale. There are currently 26 federal agencies that participate in the NNI, with 13 of those agencies reporting a nanotechnology R&D budget. A bill to reauthorize NNI (H.R. 554) is pending in the Senate.

The FY 2011 budget request proposes \$1.8 billion for NNI, a \$5 million decrease from FY 2010 enacted. The most significant decrease in funding (-20 percent, or \$87 million) is at DOD, where the Administration did not request funding for Congressionally directed projects funded in FY 2010. But NSF's contribution to NNI also decreases some, while DOE's and Health and Human Services' contributions increase significantly. Overall, environmental, health and safety (EHS) research would increase by 22 percent to \$119 million and nanomanufacturing R&D would be a new focus at several agencies, with total funding of \$87 million.

Networking and Information Technology R&D Program (NITRD)

Similarly, the S&T Committee was instrumental in the development of the multi-agency Networking and Information Technology Research and Development (NITRD) program through the High Performance Computing Act of 1991 (P.L. 102-194). The mission of the NITRD program is to accelerate progress in the advancement of computing and networking technologies and to support leading edge computational research in a range of science and engineering fields. Currently, 13 Federal agencies contribute funding to the NITRD program and additional agencies, such as DHS, participate in planning activities.

The Administration proposes \$4.3 billion for NITRD in the FY 2011 budget, a decrease of \$9 million from FY 2010 enacted. The key NITRD agencies, including NSF, DOE and HHS (because of health IT) increase their contributions to NITRD in FY 2011. DOD's funding is decreased by \$171 million, again accounted for by Congressionally directed projects.